热点一

[[illegible] 1] [illegible] E [illegible] x [illegible]

[illegible] $\sqrt{2}$ [illegible] 1 [illegible] e [illegible] $\frac{\sqrt{2}}{2}$.

(1) [illegible] E [illegible]

(2) [illegible] (1,0) [illegible] l [illegible] E [illegible] P [illegible] Q [illegible] x [illegible]

[illegible] M [illegible] $MP \cdot MQ$ [illegible]

[illegible] M [illegible]

[□□□□] (1)□□□ E□□□□ $\frac{x^2}{a^2}$□$\frac{y^2}{b^2}$□$1(a$□b□$0)$□□□

□□ $\begin{cases} a□c□\sqrt{2}□1□ \\ \frac{c}{a}□\frac{\sqrt{2}}{2}□ \end{cases}$ □□ $\begin{cases} a□\sqrt{2}□ \\ c□1. \end{cases}$

□□ b^2□a^2□c^2□$1.$

□□□□ E□□□□ $\frac{x^2}{2}$□y^2□$1.$

(2)□□□□□□□□□□ $M(m,0)$□□ $P(x_1$□ $y_1)$□ $Q(x_2$□ $y_2)$□ ……………………………………………………□

□ $\overrightarrow{MP}$□$(x_1$□m□$y_1)$□ $\overrightarrow{MQ}$□$(x_2$□m□$y_2)$□ $\overrightarrow{MP}\cdot\overrightarrow{MQ}$□$(x_1$□$m)(x_2$□$m)$□$y_1y_2$□$x_1x_2$□$m(x_1$□$x_2)$□$m^2$□$y_1y_2$……………………………□

①□□□ l □□□□□□□□□ l □□□□ y□$k(x$□$1)$□□

$$\begin{cases}\dfrac{x^2}{2}\square y^2\square 1\square \\ y\square k(x\square 1)\square\end{cases}$$

□ x^2□$2k^2(x$□$1)^2$□2□0□□$(2k^2$□$1)x^2$□$4k^2x$□$2k^2$□2□0□

□ $x_1+x_2=\dfrac{4k^2}{2k^2+1}$，$x_1x_2=\dfrac{2k^2-2}{2k^2+1}$，

$y_1y_2=k^2(x_1-1)(x_2-1)=k^2[x_1x_2-(x_1+x_2)+1]=-\dfrac{k^2}{2k^2+1}$，……………………………………………□

□ □ $\overrightarrow{MP}\cdot\overrightarrow{MQ}=\dfrac{2k^2-2}{2k^2+1}-m\dfrac{4k^2}{2k^2+1}+m^2-\dfrac{k^2}{2k^2+1}=$

$\dfrac{(2m^2-4m+1)k^2+(m^2-2)}{2k^2+1}$.

□□□□□□□ k，□ $\overrightarrow{MP}\cdot\overrightarrow{MQ}$ □□□□□□ $2m^2-4m+1=2(m^2-2)$，

□ $m=\dfrac{5}{4}$.

□□ $M\left(\frac{5}{4}□0\right)$□□□ $MP\cdot MQ$□□$\frac{7}{16}$.……………………□

②□□□ l□□□□□□□□□ l□□□□ x□1□□

x_1□ x_2□2□x_1x_2□1□y_1y_2□□$\frac{1}{2}$□□ m□$\frac{5}{4}$□□ $MP\cdot MQ$□□$\frac{7}{16}$.

□□□□□□□□□ M□□□□□□□$\left(\frac{5}{4}□0\right)$.

……………………………………………………□

[illegible] 1[illegible] xOy [illegible] $P(x$[illegible]$y)$[illegible]$M(x$[illegible]$4)$[illegible]

[illegible] PM [illegible] O.

(1)[illegible] P [illegible] W [illegible]

(2)[illegible] $E(0$[illegible]$4)$[illegible] l [illegible] W [illegible] A[illegible]B[illegible] A[illegible]

[illegible] y [illegible] A' [illegible] $A'B$ [illegible]

[illegible]

□□ (1)□□□□□ $OP\perp OM$□

□□ $OP\cdot OM$□0□□□$(x$□$y)\cdot(x$□□$4)$□0□

□ x^2□$4y$□0□□□□□ P□□□ W□□□□ x^2□$4y$.

(2)□□□□ l□□□□□

□□□ l□□□□ y□kx□4□

$A(x_1$□$y_1)$□$B(x_2$□$y_2)$□□ A' (□x_1□$y_1)$□

□ $\begin{cases} y□kx□4□ \\ x^2□4y□ \end{cases}$ □ y□□□□ x^2□$4kx$□16□0□

$\square\ \Delta \square\ 16k^2 \square\ 64 \square\ 0 \square\ \square\ |k| \square\ 2.$

$x_1 \square\ x_2 \square\ 4k \square\ x_1x_2 \square\ 16.$

$\square\ \square\ A'\ \ B \square\ \ y \square\ y_2 \square\ \dfrac{y_2 \square\ y_1}{x_2 \square\ x_1}(x \square\ x_2) \square$

$$\therefore y \square\ \frac{y_2 \square\ y_1}{x_2 \square\ x_1}(x \square\ x_2) \square\ y_2$$

$$\square\ \frac{x_2^2 \square\ x_1^2}{4(x_1 \square\ x_2)}(x \square\ x_2) \square\ \frac{1}{4}x_2^2$$

$$\square \frac{x_2 \square x_1}{4}x \square \frac{x_2^2 \square x_1x_2}{4} \square \frac{1}{4}x_2^2$$

$$\square \frac{x_2 \square x_1}{4}x \square \frac{x_1x_2}{4}.$$

$$\square\ y \square \frac{x_2 \square x_1}{4}x \square 4 \square$$

□□□□□ A' B□□□□ $(0,4)$□

[□ 2] □□□□ E□ $\frac{x^2}{a^2}$□ $\frac{y^2}{b^2}$□ $1(a$□ b□ $0)$□□□□□□

$(1,0)$□□ $P\left(1□\frac{3}{2}\right)$□□□ E□□

(1)□□□ E□□□□

(2)□□□ E□□□□ A□□□□□□□□□□□□□□

□ E□□(□□□□ A□)M□ N□□□□□□□□ MN□ x

□□□□□□□□□□□□□□□□□□□□□□□□□□

□□□□

[□□□□] (1)□□□ E □□□□□□□□ F_1□ F_2□

∵□□ E □□□□(1,0)□∴ c□1□

□□ $P\left(1\square\ \frac{3}{2}\right)$□□□ E □□

$$\therefore 2a\square\ |PF_1|\square\ |PF_2|\square\ \sqrt{(1\square\ 1)^2\square\ \left(\frac{3}{2}\right)^2}\square\ \sqrt{(1\square\ 1)^2\square\ \left(\frac{3}{2}\right)^2}\square$$

4□

$\therefore a\square\ 2\square\ b\square\ \sqrt{a^2\square\ c^2}\square\ \sqrt{3}\square$

∴□□□□□ $\frac{x^2}{4}\square\ \frac{y^2}{3}\square\ 1.$

(2)① [illegible] MN [illegible] x [illegible]

[illegible] AM [illegible] y [illegible] x [illegible] 2 [illegible]

[illegible] $\begin{cases} y\,[illegible]\,x\,[illegible]\,2 \\ 3x^2\,[illegible]\,4y^2\,[illegible]\,12 \end{cases}$ [illegible] $7x^2$ [illegible] $16x$ [illegible] 4 [illegible] 0 [illegible]

[illegible] x [illegible] $\frac{2}{7}$ [illegible] x [illegible] 2([illegible]) [illegible]

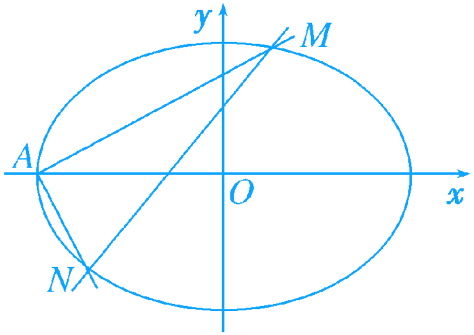
[illegible] MN [illegible] x [illegible] $\frac{2}{7}$ [illegible] MN [illegible] x [illegible]

$Q\left([illegible]\frac{2}{7}[illegible]0\right)$.

②□□□ MN□□□□ x□□□□□□ MN□□□□ y□

kx□ n.

□□ $\begin{cases} y \square kx \square n\square \\ 3x^2 \square 4y^2 \square 12\square \end{cases}$



□ $(3\square 4k^2)x^2 \square 8knx \square 4n^2 \square 12 \square 0$.

□ $M(x_1\square y_1)$□ $N(x_2\square y_2)$□

□ $\Delta \square (8kn)^2 \square 4\times(3\square 4k^2)(4n^2\square 12)>0$□ □ $n^2 \square 4k^2 \square 3<0$

□□

□□ $x_1 \square x_2 \square \dfrac{\square 8kn}{3\square 4k^2}$□ $x_1x_2 \square \dfrac{4n^2\square 12}{3\square 4k^2}$□

$y_1y_2 \square (kx_1 \square n)(kx_2 \square n) \square k^2x_1x_2 \square kn(x_1 \square x_2) \square n^2 \square$

$$\frac{3n^2 \square 12k^2}{3 \square 4k^2}.$$

□ $AM \square (x_1 \square 2 \square y_1) \square AN \square (x_2 \square 2 \square y_2) \square$

□□□□□□ $AM \perp AN \square$

□ $AM \cdot AN \square x_1x_2 \square 2(x_1 \square x_2) \square 4 \square y_1y_2 \square$

$$\frac{7n^2 \square 16kn \square 4k^2}{3 \square 4k^2} \square 0 \square$$

□□ n□$2k$□ n□$\frac{2}{7}k$.

□ n□$2k$□□□□ MN□□□□ y□$k(x$□$2)$□□□ A□□□□□□□□□□

□ n□$\frac{2}{7}k$□□ n^2□$4k^2$□$3<0$□□□ MN□□□□ y□$k\left(x$□$\frac{2}{7}\right)$□□□□□ $Q\left(\right.$□$\frac{2}{7}$□$\left.0\right)$.

□□□□□ MN□□□□ x□□□□□ $Q\left(\right.$□$\frac{2}{7}$□$\left.0\right)$.

[illegible]·[illegible]

[illegible]

[illegible] x[illegible]y[illegible]

[illegible]

[illegible]

[illegible] x[illegible]y[illegible]

[illegible]

[illegible] 2 [illegible] C：$\frac{x^2}{a^2}$ + $\frac{y^2}{b^2}$ = $1(a>b>0)$ [illegible] e = $\frac{\sqrt{2}}{2}$ [illegible]

[illegible] F_1、F_2 [illegible] $P(2,\sqrt{3})$ [illegible] F_2 [illegible] PF_1 [illegible]

(1) [illegible] C [illegible]

(2) [illegible] l：$y = kx + m$ [illegible] C [illegible] M、N [illegible] F_2M

[illegible] F_2N [illegible] α、β [illegible] $\alpha + \beta = \pi$ [illegible] l [illegible]

[illegible]

□□ (1)□□□ C□□□□ e□$\frac{\sqrt{2}}{2}$□□□$\frac{c}{a}$□$\frac{\sqrt{2}}{2}$□

□□ c□$\sqrt{a^2□b^2}$□

□□ C□□□□□□□□□ F_1(□c,0)□F_2(c,0)□

□∵□ F_2□□□ PF_1□□□□□□

∴ $|F_1F_2|$□$|PF_2|$□∴ $(2c)^2$□$(\sqrt{3})^2$□$(2$□$c)^2$□

□□ c□1□∴ a^2□2□b^2□1.

∴□□□□□□$\frac{x^2}{2}$□y^2□1.

(2)□□□□□ MN □□□□ $y□kx□m$□

□ $\begin{cases} \dfrac{x^2}{2}□y^2□1□ \\ y□kx□m□ \end{cases}$ □□ $y□(2k^2□1)x^2□4kmx□2m^2□2□0$.

□ $M(x_1□y_1)$□$N(x_2□y_2)$□

□ $x_1□x_2$□□□ $\dfrac{4km}{2k^2□1}$□ x_1x_2□ $\dfrac{2m^2□2}{2k^2□1}$□□□ k_{F_2M}□ $\dfrac{kx_1□m}{x_1□1}$□ k_{F_2N}□

$\dfrac{kx_2□m}{x_2□1}$.

□□□ $α□β□π$□ $k_{F_2M}□k_{F_2N}□0$□

□ $\frac{kx_1 □ m}{x_1 □ 1} □ \frac{kx_2 □ m}{x_2 □ 1} □ 0.$

□□□ $2kx_1x_2 □ (m □ k)(x_1 □ x_2) □ 2m □ 0$□

□□ $2k\cdot\frac{2m^2 □ 2}{2k^2 □ 1} □ \frac{4km(m □ k)}{2k^2 □ 1} □ 2m □ 0$□

□□□ $m □ □ 2k.$

□□□ MN□□□□ $y □ k(x □ 2)$□

□□□□ MN□□□□□□□□□□□ $(2,0).$

热点二 □□□□□□□□□□

[□ 3] (2013·□□□□)□□ C□ $\frac{x^2}{a^2}$□$\frac{y^2}{b^2}$□1(a□b□0)□□□□□□□□□ F_1□F_2□□□□□ $\frac{\sqrt{3}}{2}$□□ F_1□□□□ x□□□□□□□ C □□□□□□□ 1.

(1)□□□ C□□□□

(2)□ P□□□ C□□□□□□□□□□□□□□ PF_1□ PF_2.□ $\angle F_1PF_2$□□□□□ PM□ C□□□□□ $M(m,0)$□□ m□□□□□□

(3)□(2)□□□□□□□ P□□□□ k□□□ l□□□ l□□□ C □□□□□□□□□□□□□ PF_1□PF_2□□□□□□ k_1□k_2□□ $k\neq 0$□□□□ $\frac{1}{kk_1}$□$\frac{1}{kk_2}$□□□□□□□□□□□□

[□□□□]　(1)□□ c^2□a^2□b^2□□ x□□ c□□□□□□ $\frac{x^2}{a^2}$□$\frac{y^2}{b^2}$□

1□□ y□$\pm\frac{b^2}{a}$.

□□□□ $\frac{2b^2}{a}$□1□□ a□$2b^2$.

□ e□$\frac{c}{a}$□$\frac{\sqrt{3}}{2}$□□□ a□2□b□1.

□□□□ C□□□□ $\frac{x^2}{4}$□y^2□1.

(2)□□□□ $P(x_0$□$y_0)(y_0 \neq 0)$□

□ $F_1($□$\sqrt{3}$□$0)$□$F_2(\sqrt{3}$□$0)$□□□□□ PF_1□PF_2□□□□□□

$l_{PF_1}\square\ y_0x\square\ (x_0\square\ \sqrt{3})y\square\ \sqrt{3}y_0\square\ 0\square$

$l_{PF_2}\square\ y_0x\square\ (x_0\square\ \sqrt{3})y\square\ \sqrt{3}y_0\square\ 0.$

□□□□ $\dfrac{|my_0\square\ \sqrt{3}y_0|}{\sqrt{y_0^2\square\ (x_0\square\ \sqrt{3})^2}}\square\ \dfrac{|my_0\square\ \sqrt{3}y_0|}{\sqrt{y_0^2\square\ (x_0\square\ \sqrt{3})^2}}.$

□□□ P□□□□□□□ $\dfrac{x_0^2}{4}\square\ y_0^2\square\ 1.$

□□ $\dfrac{|m\square\ \sqrt{3}|}{\sqrt{\left(\dfrac{\sqrt{3}}{2}x_0\square\ 2\right)^2}}\square\ \dfrac{|m\square\ \sqrt{3}|}{\sqrt{\left(\dfrac{\sqrt{3}}{2}x_0\square\ 2\right)^2}}.$

□□□ $\sqrt{3}<m<\sqrt{3}$□□ $2<x_0<2$□

□□ $\dfrac{m\square\sqrt{3}}{\dfrac{\sqrt{3}}{2}x_0\square 2}\square\dfrac{\sqrt{3}\square m}{2\square\dfrac{\sqrt{3}}{2}x_0}$□□□ $m\square\dfrac{3}{4}x_0$.

□□□ $\dfrac{3}{2}<m<\dfrac{3}{2}$.

□□□□ $P(x_0\square y_0)(y_0\neq 0)$□

□ $0\le x_0<2$□□

①□ $x_0\square\sqrt{3}$□□□□ PF_2□□□□□□□□□ $P\left(\sqrt{3}\square\dfrac{1}{2}\right)$□

$P\left(\sqrt{3}\square\square\dfrac{1}{2}\right)$.

□ $P\left(\sqrt{3}\square\dfrac{1}{2}\right)$□□□□ PF_1□□□□ $x\square 4\sqrt{3}y\square\sqrt{3}\square 0$.

□□□□ $\frac{|m\square\sqrt{3}|}{7}$□$\sqrt{3}$□ m□

□□□ $\sqrt{3}<m<\sqrt{3}$□□□ m□ $\frac{3\sqrt{3}}{4}$.

□ $P\left(\sqrt{3}\square\square\frac{1}{2}\right)$□□□□□ m□ $\frac{3\sqrt{3}}{4}$.

②□ $x_0\neq\sqrt{3}$□□□□□ PF_1□ PF_2□□□□□□ y□ $k_1(x\square\sqrt{3})$□
y□ $k_2(x\square\sqrt{3})$□

□□□□ $\frac{|mk_1\square\sqrt{3}k_1|}{\sqrt{1\square k_1^2}}$□ $\frac{|mk_2\square\sqrt{3}k_2|}{\sqrt{1\square k_2^2}}$□

□□ $\frac{(m\square\sqrt{3})^2}{(m\square\sqrt{3})^2}$□ $\frac{1\square\frac{1}{k_1^2}}{1\square\frac{1}{k_2^2}}$.

□□ $\frac{x_0^2}{4}\square y_0^2\square 1$□□ $k_1\square\frac{y_0}{x_0\square\sqrt{3}}$□$k_2\square\frac{y_0}{x_0\square\sqrt{3}}$□

□□ $\frac{(m\square\sqrt{3})^2}{(m\square\sqrt{3})^2}\square\frac{4(x_0\square\sqrt{3})^2\square 4\square x_0^2}{4(x_0\square\sqrt{3})^2\square 4\square x_0^2}\square\frac{3x_0^2\square 8\sqrt{3}x_0\square 16}{3x_0^2\square 8\sqrt{3}x_0\square 16}$□

$\frac{(\sqrt{3}x_0\square 4)^2}{(\sqrt{3}x_0\square 4)^2}$□

□ $\left|\frac{m\square\sqrt{3}}{m\square\sqrt{3}}\right|\square\left|\frac{\sqrt{3}x_0\square 4}{\sqrt{3}x_0\square 4}\right|$.

□□□ $\sqrt{3}<m<\sqrt{3}$□$0\le x_0<2$□ $x_0\neq\sqrt{3}$□

□□ $\frac{\sqrt{3}\square m}{\sqrt{3}\square m}\square\frac{4\square\sqrt{3}x_0}{4\square\sqrt{3}x_0}$□□□□ $m\square\frac{3x_0}{4}$□

□ $0\le m<\frac{3}{2}$□ $m\ne\frac{3\sqrt{3}}{4}$.

□□①②□□ $0\le m<\frac{3}{2}$.

□□$2<x_0<0$□□□□□□□$\frac{3}{2}<m<0$.

□□□□□m□□□□□□$\left(□\frac{3}{2}□\frac{3}{2}\right)$.

(3)□ $P(x_0$□$y_0)(y_0\ne 0)$□□□□ l□□□□ y□y_0□$k(x$□$x_0)$□

□□ $\begin{cases} \dfrac{x^2}{4}+y^2=1, \\ y-y_0=k(x-x_0), \end{cases}$ □□□ $(1+4k^2)x^2+8(ky_0-k^2x_0)x+4(y_0^2-2kx_0y_0+k^2x_0^2-1)=0.$

□□□□ $\Delta=0$，□ $(4-x_0^2)k^2+2x_0y_0k+1-y_0^2=0.$

□ $\dfrac{x_0^2}{4}+y_0^2=1$，□□□ $16y_0^2k^2+8x_0y_0k+x_0^2=0$，□ $k=-\dfrac{x_0}{4y_0}$.

□ (2) □ $\dfrac{1}{k_1}+\dfrac{1}{k_2}=\dfrac{x_0-\sqrt{3}}{y_0}+\dfrac{x_0+\sqrt{3}}{y_0}=\dfrac{2x_0}{y_0}$，

□□ $\dfrac{1}{kk_1}+\dfrac{1}{kk_2}=\dfrac{1}{k}\left(\dfrac{1}{k_1}+\dfrac{1}{k_2}\right)=\left(-\dfrac{4y_0}{x_0}\right)\cdot\dfrac{2x_0}{y_0}=-8$，

□□ $\dfrac{1}{kk_1}+\dfrac{1}{kk_2}$ □□□□□□□□□ -8.

[illegible]·[illegible]

[illegible]“[illegible]”[illegible]

(1)[illegible]

(2)[illegible]([illegible])[illegible]

(3)[illegible]

[illegible] 3[illegible] xOy [illegible] $\frac{x^2}{a^2}$ [illegible] $\frac{y^2}{b^2}$ [illegible] $1(a>b>0)$

[illegible] $F_1($[illegible]$c,0)$[illegible]$F_2(c,0)$[illegible] $(1$[illegible]$e)$[illegible] $\left(e\text{[illegible]}\frac{\sqrt{3}}{2}\right)$

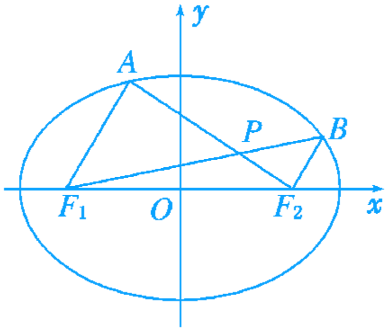
[illegible] e[illegible]

(1)[illegible]

(2)[illegible] A[illegible]B[illegible] x[illegible] AF_1[illegible]

BF_2[illegible]AF_2[illegible] BF_1[illegible] P[illegible]

(i)[illegible] AF_1[illegible]BF_2[illegible] $\frac{\sqrt{6}}{2}$[illegible] AF_1[illegible]



(ii)[illegible] $|PF_1|$[illegible]$|PF_2|$[illegible]

□□ (1)□□□□ a^2□b^2□c^2□e□$\frac{c}{a}$.

□□(1□e)□□□□□□ $\frac{1}{a^2}$□$\frac{c^2}{a^2b^2}$□1□

□□ b^2□1□□□ c^2□a^2□1.

□□□□ $\left(e$□$\frac{\sqrt{3}}{2}\right)$□□□□□□□ $\frac{e^2}{a^2}$□$\frac{3}{4b^2}$□1□

□ $\frac{a^2}{a^4}$□$\frac{3}{4}$□1□□□ a^2□2.

(In the first fraction of this line, the numerator reads a^2□1.)

□□□□□□□□□□□ $\frac{x^2}{2}$□y^2□1.

(2)由(1)得 $F_1(-1,0)$，$F_2(1,0)$，又因为直线 AF_1 与 BF_2 平行，所以可设直线 AF_1 的方程为 $x+1=my$，直线 BF_2 的方程为 $x-1=my$. 设 $A(x_1，y_1)$，$B(x_2，y_2)$，$y_1>0$，$y_2>0$.

由 $\begin{cases} \dfrac{x_1^2}{2}+y_1^2=1， \\ x_1+1=my_1， \end{cases}$ 得 $(m^2+2)y_1^2-2my_1-1=0$，

所以 $y_1=\dfrac{m+\sqrt{2m^2+2}}{m^2+2}$，

则 $|AF_1|=\sqrt{(x_1+1)^2+(y_1-0)^2}=$

$\sqrt{(my_1)^2+y_1^2}=\dfrac{\sqrt{2}(m^2+1)+m\sqrt{m^2+1}}{m^2+2}$. ①

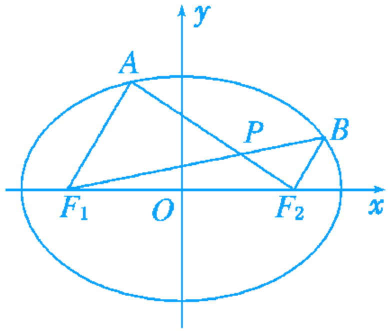
同理得 $|BF_2|=\dfrac{\sqrt{2}(m^2+1)-m\sqrt{m^2+1}}{m^2+2}$. ②

(i)□①②□ $|AF_1|□|BF_2|□\frac{2m\sqrt{m^2□1}}{m^2□2}$□

□$\frac{2m\sqrt{m^2□1}}{m^2□2}$□$\frac{\sqrt{6}}{2}$□□ $m^2□2$□□□□ $m>0$□□ $m□\sqrt{2}$.

□□□□ AF_1□□□□ $\frac{1}{m}$□$\frac{\sqrt{2}}{2}$.

(ii)□□□□□□□ AF_1□ BF_2□□□



□□ $\frac{|PB|}{|PF_1|}□\frac{|BF_2|}{|AF_1|}$□

□□ $\frac{|PB|□|PF_1|}{|PF_1|}□\frac{|BF_2|□|AF_1|}{|AF_1|}$□

□ $|PF_1|\square\dfrac{|AF_1|}{|AF_1|\square|BF_2|}|BF_1|$.

□□ B□□□□□ $|BF_1|\square|BF_2|\square 2\sqrt{2}$□

□□ $|PF_1|\square\dfrac{|AF_1|}{|AF_1|\square|BF_2|}(2\sqrt{2}\square|BF_2|)$□

□□ $|PF_2|\square\dfrac{|BF_2|}{|AF_1|\square|BF_2|}(2\sqrt{2}\square|AF_1|)$□

□□□ $|PF_1|\square|PF_2|\square\dfrac{|AF_1|}{|AF_1|\square|BF_2|}(2\sqrt{2}\square|BF_2|)\square$

$\dfrac{|BF_2|}{|AF_1|\square|BF_2|}(2\sqrt{2}\square|AF_1|)\square 2\sqrt{2}\square\dfrac{|2AF_1|\cdot|BF_2|}{|AF_1|\square|BF_2|}$.

□□①②□ $|AF_1| \square |BF_2| \square \frac{2\sqrt{2}(m^2 \square 1)}{m^2 \square 2} \square \frac{3\sqrt{2}}{2}$ □

$|AF_1|\cdot|BF_2| \square \frac{m^2 \square 1}{m^2 \square 2} \square \frac{3}{4}$ □

□□ $|PF_1| \square |PF_2| \square 2\sqrt{2} \square \frac{\sqrt{2}}{2} \square \frac{3\sqrt{2}}{2}$.

□□□ $|PF_1| \square |PF_2|$ □□□.

热点三

□□□□□□□□

□□ 4□ ► □□□□□□ O□□□□□□□□□ y□□□□□□

□□ $M(0$□□$2)$□□□ l□□□□□□□ A□B□□□□□□

$\vec{OA}$□$\vec{OB}$□(□4□□12)□

(1)□□□ l□□□□□□□□

(2)□□□□□□□□ P□□ A□□□□ B□□□ △ABP□

□□□□□□

[□□□□] (1)□□□□□□□ l□□□□ y□ kx□ 2□□□□□

□□ x^2□□2py(p□ 0)□

□ $\begin{cases} y\square\ kx\square\ 2\square \\ x^2\square\ \square\ 2py\square \end{cases}$ □ x^2□ 2pkx□ 4p□ 0.

□□ $A(x_1$□ $y_1)$□ $B(x_2$□ $y_2)$□□ x_1□ x_2□□ 2pk□ y_1□ y_2□ $k(x_1$□ $x_2)$□

4□□ 2pk^2□ 4.

□□ $\vec{OA}$□ $\vec{OB}$□ (□ 4□□ 12)□□□ $\begin{cases} \square\ 2pk\square\ \square\ 4\square \\ \square\ 2pk^2\square\ 4\square\ \square\ 12\square \end{cases}$

□□ $\begin{cases} p\square\ 1\square \\ k\square\ 2. \end{cases}$ □□□ l□□□□ y□ 2x□ 2□□□□□□□ x^2□□

2y.

(2)□ $P(x_0$□ $y_0)$□□□□□□□□□□□□ P□□□□ l□□□□

△ABP□□□□□□

□ y□□ $\frac{1}{2}x^2$□□□□ y' □□ x□□□□ x_0□ 2□□ x_0□□ 2□ y_0□

□ $\frac{1}{2}x_0^2$□□ 2□□ $P($□ 2□□ 2)□

□□□ P□□□ l□□□

$$d□\frac{|2\cdot(□2)□(□2)□2|}{\sqrt{2^2□(□1)^2}}□\frac{4}{\sqrt{5}}□\frac{4\sqrt{5}}{5}.$$

□ $\begin{cases} y□2x□2□ \\ x^2□□2y□ \end{cases}$ □ $x^2□4x□4□0□$

□ $x_1□x_2□□4□x_1x_2□□4□$

$|AB|□\sqrt{1□k^2}\cdot\sqrt{(x_1□x_2)^2□4x_1x_2}$

$□\sqrt{1□2^2}\cdot\sqrt{(□4)^2□4\cdot(□4)}$

$□4\sqrt{10}.$

□□□$\triangle ABP$□□□□□□

$\frac{1}{2}\times 4\sqrt{10}\times\frac{4\sqrt{5}}{5}□8\sqrt{2}.$

[illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible]

□□□□□□□□

□□ 5□ ►(2012·□□)□□□□□□□□ xOy□□□□□□ C□ $\frac{x^2}{a^2}$□ $\frac{y^2}{b^2}$□1(a□ b□0)□□□□ e□ $\sqrt{\frac{2}{3}}$□□□□ C□□□□□ $Q(0,2)$□□□□□□□□ 3.

(1)□□□ C□□□□

(2)□□□ C□□□□□□□ $M(m$□ $n)$□□□□□ l□ mx□ ny□1□□ O□ x^2□ y^2□1□□□□□□□□ A□ B□□△OAB□□□□□□□□□□□□□□ M□□□□□□□△OAB□□□□□□□□□□□□□□□□

[□□□□] $(1)\square\ e\square\frac{c}{a}\square\sqrt{\frac{a^2\square b^2}{a^2}}\square\sqrt{\frac{2}{3}}\square\square\ a\square\sqrt{3}b\square$

$\square\square\ C\square\frac{x^2}{3b^2}\square\frac{y^2}{b^2}\square 1\square\square\ x^2\square 3y^2\square 3b^2\square$

$\square\ P(x\square y)\square\ C\square\square\square\square\square\square$

$\square|PQ|\square\sqrt{x^2\square(y\square 2)^2}\square\sqrt{\square 2(y\square 1)^2\square 3b^2\square 6}\square$

$\square b\leq y\leq b.$

$\square\ b\square 1\square\square\square\ b\square\square 1\square\square\ y\square\square\ b\square\square\ |PQ|_{max}\square$

$\sqrt{\square 2(\square b\square 1)^2\square 3b^2\square 6}\square 3\square\square\ b\square 0\square\square\ b\square 1(\square\square)\square$

□ $b\geq 1$ □ □ □ $b\leq$ □ 1 □ □ y □ □ 1 □ □ $|PQ|_{\max}$ □

$\sqrt{\text{□}2(\text{□}1\text{□}1)^2\text{□}3b^2\text{□}6\text{□}3}$ □ □ b□1.

∴□□ C□□□□ $\frac{x^2}{3}$□ y^2□1.

(2) □□ □□□□□□□□ $M(m$□$n)$□□□□□

□□ $\frac{m^2}{3}$□ n^2□1□□ n^2□1□ $\frac{m^2}{3}$□□ $\sqrt{3}\leq m\leq\sqrt{3}$.□□□□□

$$S_{\triangle AOB}=\frac{1}{2}|OA|\cdot|OB|\sin\angle AOB=\frac{1}{2}\sin\angle AOB\leqslant\frac{1}{2},$$

当$\angle AOB=90^\circ$时取等号，这时$\triangle AOB$为等腰直角三角形，

□□□□$(0,0)$□□□ mx□ny□1□□□□ $\frac{\sqrt{2}}{2}$□

□ $\frac{1}{\sqrt{m^2\square n^2}}$□$\frac{\sqrt{2}}{2}$□□ m^2□n^2□2□□ $\frac{m^2}{3}$□n^2□1□□□ m^2□$\frac{3}{2}$□n^2□

$\frac{1}{2}$□□□□ M□□□□ $\left(\frac{\sqrt{6}}{2}\square\frac{\sqrt{2}}{2}\right)$□$\left(\frac{\sqrt{6}}{2}\square\square\frac{\sqrt{2}}{2}\right)$□$\left(\square\frac{\sqrt{6}}{2}\square\frac{\sqrt{2}}{2}\right)$□

$\left(\square\frac{\sqrt{6}}{2}\square\square\frac{\sqrt{2}}{2}\right)$□□□□□□$\triangle AOB$□□□□□□$\frac{1}{2}$.

□□　□□□□□□□□ $M(m$□$n)$□□□□□□□ $\frac{m^2}{3}$□n^2□1□□

n^2□1□$\frac{m^2}{3}$□□ $\sqrt{3}\le m\le \sqrt{3}$□

□□ $A(x_1$□$y_1)$□$B(x_2$□$y_2)$□□ $\begin{cases} mx□ny□1 \\ x^2□y^2□1 \end{cases}$ □□□ y□$(m^2$□$n^2)x^2$

□$2mx$□1□n^2□0□

①

□ n^2□1□$\frac{m^2}{3}$□□①□□□$(3$□$2m^2)x^2$□$6mx$□m^2□0□

□Δ□$8m^2(3$□$m^2)\ge 0$□

$$\therefore \begin{cases} x_1 \square\ x_2 \square\ \dfrac{6m}{3\square\ 2m^2}\square \\ x_1x_2 \square\ \dfrac{m^2}{3\square\ 2m^2}\square \end{cases}$$

②

$\square$ $S_{\triangle AOB}\square\ \dfrac{1}{2}|OA|\cdot|OB|\sin\angle AOB\square\ \dfrac{1}{2}\sin\angle AOB\square$

$\square$ $\angle AOB\square\ 90^\circ\square\ S_{\triangle AOB}\square\ \square\ \square\ \square\ \square\ \dfrac{1}{2}\square$

$\square$ $\square$ $\vec{OA}\cdot\vec{OB}\square\ x_1x_2\ \square\ y_1y_2\ \square\ 0\square\ \square\ y_1y_2\ \square\ \dfrac{1\square\ mx_1}{n}\cdot\dfrac{1\square\ mx_2}{n}\square$

$$\frac{3\square\ 3m(x_1\square\ x_2)\square\ 3m^2x_1x_2}{3\square\ m^2}\square$$

$\therefore x_1x_2 □ \dfrac{3 □ 3m(x_1 □ x_2) □ 3m^2x_1x_2}{3 □ m^2} □ 0 □$

□ $3 □ 3m(x_1 □ x_2) □ (3 □ 2m^2)\cdot x_1x_2 □ 0 □$

□ ② □ □ □ □ □ □ □ $2m^4 □ 9m^2 □ 9 □ 0 □$

□ □ $m^2 □ \dfrac{3}{2} □ m^2 □ 3($□ □$) □$

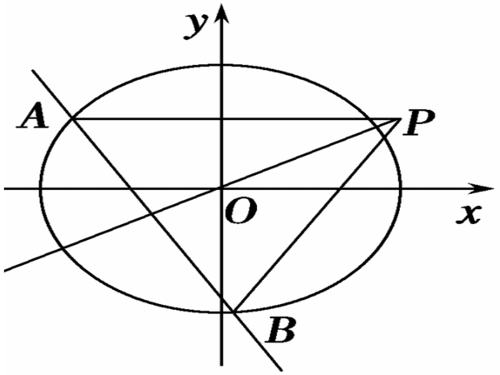
$\therefore m □ \pm\dfrac{\sqrt{6}}{2} □ n □ \pm\sqrt{1 □ \dfrac{m^2}{3}} □ \pm\dfrac{\sqrt{2}}{2} □$

$\therefore M$ □ □ □ □ □ $\left(\dfrac{\sqrt{6}}{2} □ \dfrac{\sqrt{2}}{2}\right) □ \left(\dfrac{\sqrt{6}}{2} □ □ \dfrac{\sqrt{2}}{2}\right) □ \left(□ \dfrac{\sqrt{6}}{2} □ \dfrac{\sqrt{2}}{2}\right) □ \left(□ \dfrac{\sqrt{6}}{2} □ □ \dfrac{\sqrt{2}}{2}\right) □$

□ □ $S_{\triangle AOB}$ □ □ □ □ □ $\dfrac{1}{2}$.

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

【例 6】▶ (2012·浙江)如图，椭圆 C: $\frac{x^2}{a^2}+\frac{y^2}{b^2}=1(a>b>0)$的离心率为$\frac{1}{2}$，其左焦点到点 $P(2,1)$的距离为$\sqrt{10}$. 不过原点 O 的直线 l 与 C 相交于 A，B 两点，且线段 AB 被直线 OP 平分.



(1)求椭圆 C 的方程；

(2)求$\triangle ABP$ 面积取最大值时直线 l 的方程.

[□□□□](1)□□□□□□□□□$\frac{1}{2}$□□□□□□□$P(2,1)$□□□

□$\sqrt{10}$□□□

(2)□□□□□□□l□□□□□□□□y□kx□m□□□□□□□□

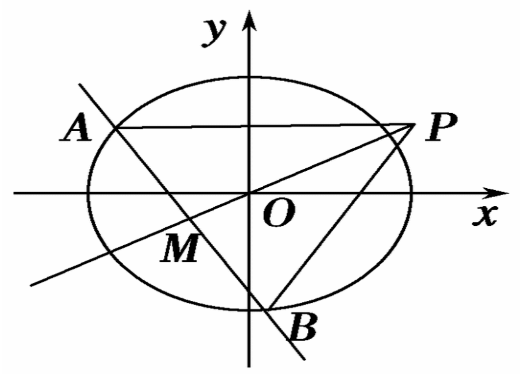
□□AB□□□OP□□□□k□□□□□AB□□□□P□□□

AB□□□□□□□□□$S_{\triangle ABP}$□□□□□□□□□□□□□□

[□□□□]

□ (1)□□□□□□□ $F(\square c,0)$□□□□□□

$$\begin{cases}\sqrt{(2\square c)^2\square 1}\square\sqrt{10}\square\\ \dfrac{c}{a}\square\dfrac{1}{2}\square\end{cases}\quad \square\ \begin{cases}c\square 1\square\\ a\square 2.\end{cases}$$



□□□□□□□ $\dfrac{x^2}{4}\square\dfrac{y^2}{3}\square 1.$

(2)□ $A(x_1\square y_1)$□$B(x_2\square y_2)$□□□ AB□□□□ M.

□□□ AB□ x□□□□□□ AB□□□□ $x\square 0$□□□□□□□

□□□□□□□□□□□□□ AB□□□□ $y\square kx\square m(m\neq 0)$□

□ $\begin{cases}y\square kx\square m\square\\ 3x^2\square 4y^2\square 12\end{cases}$ □□ y□□□□

$(3+4k^2)x^2+8kmx+4m^2-12=0$ □ (1)

□ $\Delta = 64k^2m^2 - 4(3+4k^2)(4m^2-12) > 0$ □

$$\begin{cases} x_1 + x_2 = -\dfrac{8km}{3+4k^2} \text{□} \\ x_1x_2 = \dfrac{4m^2-12}{3+4k^2}. \end{cases}$$

□□□□ AB □□□ $M\left(-\dfrac{4km}{3+4k^2}, \dfrac{3m}{3+4k^2}\right)$.

□□ M □□□ OP □ $y=\dfrac{1}{2}x$ □□□□ $\dfrac{3m}{3+4k^2}=\dfrac{-2km}{3+4k^2}$.

□ $m \neq 0$(□□)□ $k=-\dfrac{3}{2}$.

□□□□(1)□ $3x^2 \square 3mx \square m^2 \square 3 \square 0$□□

$\Delta \square 3(12 \square m^2) \square 0$□ $\begin{cases} x_1 \square x_2 \square m \square \\ x_1 x_2 \square \dfrac{m^2 \square 3}{3}. \end{cases}$

□□ $|AB| \square \sqrt{1 \square k^2} \cdot |x_1 \square x_2| \square \dfrac{\sqrt{39}}{6} \cdot \sqrt{12 \square m^2}$.

□□ P□□□ AB□□□ d□□

$$d \square \frac{|8 \square 2m|}{\sqrt{3^2 \square 2^2}} \square \frac{2|m \square 4|}{\sqrt{13}}.$$

□△ABP□□□□ S□□

$$S \square \frac{1}{2}|AB| \cdot d \square \frac{\sqrt{3}}{6} \cdot \sqrt{(m \square 4)^2 (12 \square m^2)}.$$

□□ $m \in$ (□2$\sqrt{3}$□0)∪(0,2$\sqrt{3}$)□

□ $u(m)$□(12□m^2)(m□4)^2□$m \in$ [□2$\sqrt{3}$□2$\sqrt{3}$]□

$u'(m)$□□4(m□4)(m^2□2m□6)

□□4(m□4)(m□1□$\sqrt{7}$)(m□1□$\sqrt{7}$)□

□□□□□□ m□1□$\sqrt{7}$□$u(m)$□□□□□□

□□□□□ m□1□$\sqrt{7}$□S□□□□□□

□□□□□□□ l□□□ 3x□2y□2$\sqrt{7}$□2□0.

方法锦囊

[illegible] (1) [illegible] (2) [illegible] (3) [illegible]

□□4□□□□□□ x^2□$\frac{y^2}{3}$□1□□□□□ A_1□□□□□ F_2□P□

□□□□□□□□□□$\overrightarrow{PA_1}\cdot\overrightarrow{PF_2}$□□□□□(　　)□

A□□2　　B□□$\frac{81}{16}$　　C□1　　D□0

□□□A　[□□□□ A_1(□1,0)□F_2(2,0)□□□ $P(x$□$y)(x\geq 1)$□□□ $\overrightarrow{PA_1}\cdot\overrightarrow{PF_2}$□(□1□$x$□□$y$)·(2□$x$□□$y$)□$4x^2$□$x$□5.□ $f(x)$□$4x^2$□x□5□□ $f(x)$□[1□□∞)□□□□□□□□ x□1□□□□ $f(x)$□□□□□ $\overrightarrow{PA_1}\cdot\overrightarrow{PF_2}$□□□□□□□□□□2.]

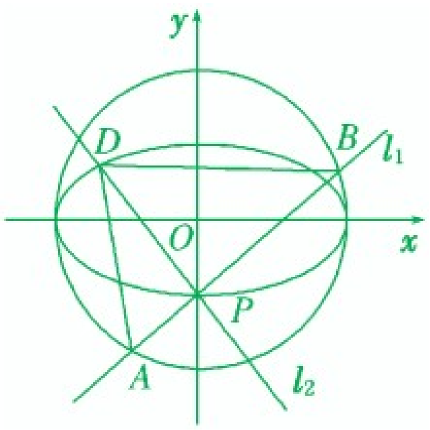
[□ 7] (2013·□□□□)□□□□ $P(0$，□

□1)□□□ C_1：□ $\frac{x^2}{a^2}$□$\frac{y^2}{b^2}$□$1(a>b>0)$□□□□

□□C_1□□□□□ C_2：x^2□y^2□4□□□□l_1□

l_2□□□ P□□□□□□□□□□□□□ l_1□□ C_2□ A□ B

□□□l_2□□□ C_1□□□□ D.



(1)□□□ C_1□□□□

(2)□△ABD□□□□□□□□□ l_1□□□□

[□□□□] (1)□□□□ $\begin{cases} b\square 1\square \\ a\square 2. \end{cases}$

□□□□ C_1□□□□ $\frac{x^2}{4}\square y^2\square 1.$

(2)□ $A(x_1\square y_1)$□ $B(x_2\square y_2)$□ $D(x_0\square y_0)$□□□□□□□ l_1□

□□□□□□□□□□ k□□□□ l_1□□□□ $y\square kx\square 1.$

□□ $C_2\square x^2\square y^2\square 4$□□□ O□□□ l_1□□□ $d\square \frac{1}{\sqrt{k^2\square 1}}$□

□□ $|AB|\square 2\sqrt{4\square d^2}\square 2\sqrt{\frac{4k^2\square 3}{k^2\square 1}}.$

□ $l_2\perp l_1$□□□□ l_2□□□□ $x\square ky\square k\square 0.$

□ $\begin{cases} x \square ky \square k \square 0\square \\ x^2 \square 4y^2 \square 4\square \end{cases}$ □□ y□□□□ $(4\square k^2)x^2 \square 8kx \square 0$□□ x_0□□ $\dfrac{8k}{4\square k^2}$.

□□ $|PD|\square \dfrac{8\sqrt{k^2\square 1}}{4\square k^2}$.

□△ABD□□□□ S□□ $S\square \dfrac{1}{2}|AB|\cdot|PD|\square \dfrac{8\sqrt{4k^2\square 3}}{4\square k^2}$□

□□ $S\square \dfrac{32}{\sqrt{4k^2\square 3}\square \dfrac{13}{\sqrt{4k^2\square 3}}} \leq \dfrac{32}{2\sqrt{\sqrt{4k^2\square 3}\cdot\dfrac{13}{\sqrt{4k^2\square 3}}}} \square \dfrac{16\sqrt{13}}{13}$□□□□

□ $k\square \pm\dfrac{\sqrt{10}}{2}$□□□□□

□□□□□□ l_1□□□□ $y\square \pm\dfrac{\sqrt{10}}{2}x\square 1$.

[illegible]·[illegible]

[illegible]①[illegible] $2a$([illegible])[illegible]②[illegible] $2a$([illegible])[illegible]③[illegible][a[illegible]c[illegible]a[illegible]c][illegible]a[illegible]c[illegible]a[illegible]c[illegible]④[illegible]

□□5□□□ F_1□ F_2□□□□□ E□ $\frac{x^2}{5}$□ y^2□ 1□□□□□□□

F_1□ F_2□□□□ x□ y□ 2□ 0□□□□□□ C□□□□□□

□□□□□

(1)□□ C□□□□

(2)□□□ F_2□□□ l□□□ E□□ C□□□□□□□□□ a□

b.□ ab□□□□□□□ l□□□□

□□ (1)□□□□□F_1□F_2□□□□□□(□2,0)□(2,0)□□ C □□□□ 2□□□□□□ O□□□□ x□y□2□0□□□□□

□□□□□□□$(x_0$□$y_0)$□□ $\begin{cases} \dfrac{y_0}{x_0}□1□ \\ \dfrac{x_0}{2}□\dfrac{y_0}{2}□2□0□ \end{cases}$ □□

$\begin{cases} x_0□2□ \\ y_0□2. \end{cases}$ □□□ C□□□□$(x$□$2)^2$□$(y$□$2)^2$□$4.$

(2)□□□□□□□□ l □□□□ $x\square my\square 2$ □□□□□□□ l

□□□ $d\square \dfrac{|2m|}{\sqrt{1\square m^2}}$．□□ $b\square 2\sqrt{2^2\square d^2}\square \dfrac{4}{\sqrt{1\square m^2}}$．

□ $\begin{cases} x\square my\square 2\square \\ \dfrac{x^2}{5}\square y^2\square 1\square \end{cases}$ □ $(m^2\square 5)y^2\square 4my\square 1\square 0$.

□ l □ E □□□□□□□□□□ $(x_1\square y_1)$ □ $(x_2\square y_2)$ □□

$y_1\square y_2\square\square \dfrac{4m}{m^2\square 5}$ □ $y_1y_2\square\square \dfrac{1}{m^2\square 5}$.

□□ $a=\sqrt{(x_1-x_2)^2+(y_1-y_2)^2}$

$=\sqrt{(1+m^2)(y_1-y_2)^2}$

$=\sqrt{(1+m^2)[(y_1+y_2)^2-4y_1y_2]}$

$$=\sqrt{(1+m^2)\left[\frac{16m^2}{(m^2+5)^2}+\frac{4}{m^2+5}\right]}$$

$$=\frac{2\sqrt{5}(m^2+1)}{m^2+5}.$$

□ □ ab □ $\dfrac{8\sqrt{5}\cdot\sqrt{m^2 \square 1}}{m^2 \square 5}$ □ $\dfrac{8\sqrt{5}\cdot\sqrt{m^2 \square 1}}{(m^2 \square 1) \square 4}$ □

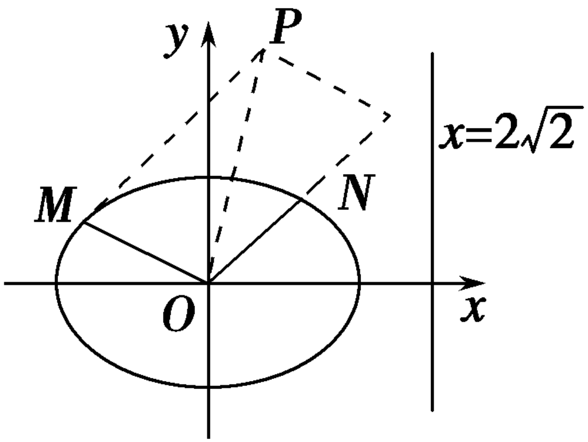
$$\frac{8\sqrt{5}}{\sqrt{m^2 \square 1} \square \dfrac{4}{\sqrt{m^2 \square 1}}} \leq \frac{8\sqrt{5}}{2\sqrt{\sqrt{m^2 \square 1}\cdot\dfrac{4}{\sqrt{m^2 \square 1}}}} \square 2\sqrt{5}.$$

□□□□ $\sqrt{m^2 \square 1} \square \dfrac{4}{\sqrt{m^2 \square 1}}$ □□ $m \square \pm\sqrt{3}$ □□□□□□

□□ $m \square \pm\sqrt{3}$ □□ ab □□□□□□□□ l □□□□ $x \square \sqrt{3}y \square 2$

□ x □□ $\sqrt{3}y \square 2$ □□ $x \square \sqrt{3}y \square 2 \square 0$ □ $x \square \sqrt{3}y \square 2 \square 0$.

【例 8】▸ (2011·重庆卷改编)如图，椭圆的中心为原点 O，离心率 $e=\frac{\sqrt{2}}{2}$，且 $\frac{a^2}{c}=2\sqrt{2}$.



(1)求该椭圆的标准方程；

(2)设动点 P 满足：$\overrightarrow{OP}=\overrightarrow{OM}+2\overrightarrow{ON}$，其中 M、N 是椭圆上的点，直线 OM 与 ON 的斜率之积为 $-\frac{1}{2}$.问：是否存在两个定点 F_1，F_2，使得 $|PF_1|+|PF_2|$ 为定值？若存在，求 F_1，F_2 的坐标；若不存在，说明理由.

[□□□□](1)□□ e□$\frac{\sqrt{2}}{2}$□$\frac{a^2}{c}$□$2\sqrt{2}$□ a□c.

(2)□ $P(x$□$y)$□$M(x_1$□$y_1)$□$N(x_2$□$y_2)$□□$\overrightarrow{OP}$□$\overrightarrow{OM}$□$2\overrightarrow{ON}$□□ x□x_1□$2x_2$□y□y_1□$2y_2$□□□M□N□□□x^2□$2y^2$□4□□□□x_1^2□$2y_1^2$□4□x_2^2□$2y_2^2$□4□□□□□□OM□ON□□□□□□□$\frac{1}{2}$.□

□□□P□□□□x^2□$2y^2$□20.□□□□□□□□□□

[□□□□]

□ (1)□ e□ $\frac{c}{a}$□ $\frac{\sqrt{2}}{2}$□ $\frac{a^2}{c}$□ $2\sqrt{2}$□□□ a□2□c□$\sqrt{2}$□b^2□a^2□c^2□2□

□□□□□□□□□ $\frac{x^2}{4}$□$\frac{y^2}{2}$□1.

(2)□ P(x□y)□M(x_1□y_1)□N(x_2□y_2)□□□ $\vec{OP}$□$\vec{OM}$□$2\vec{ON}$□□(x□

y)□(x_1□y_1)□2(x_2□y_2)□(x_1□$2x_2$□y_1□$2y_2$)□

□ x□x_1□$2x_2$□y□y_1□$2y_2$.□□□ M□N□□□ x^2□$2y^2$□4□□

□□ x_1^2□$2y_1^2$□4□x_2^2□$2y_2^2$□4□

□ x^2□$2y^2$□(x_1^2□$4x_2^2$□$4x_1x_2$)□2(y_1^2□$4y_2^2$□$4y_1y_2$)

□(x_1^2□$2y_1^2$)□4(x_2^2□$2y_2^2$)□4(x_1x_2□$2y_1y_2$)

□20□4(x_1x_2□$2y_1y_2$)□

□ k_{OM} □ k_{ON} □□□□□ OM □ ON □□□□□□□□□□

$k_{OM}\cdot k_{ON}$ □ $\frac{y_1y_2}{x_1x_2}$ □□ $\frac{1}{2}$ □□□ x_1x_2 □ $2y_1y_2$ □ 0 □

□□ x^2 □ $2y^2$ □ 20.

□□ P □□□□ $\frac{x^2}{(2\sqrt{5})^2}$ □ $\frac{y^2}{(\sqrt{10})^2}$ □ 1 □□□□□□□□□□□□□

□□ F_1 □ F_2 □□□□□□□ $|PF_1|$ □ $|PF_2|$ □□□□□□ c □

$\sqrt{(2\sqrt{5})^2$ □ $(\sqrt{10})^2}$ □ $\sqrt{10}$ □□□□□□□□□ $F_1($ □ $\sqrt{10}$ □ $0)$ □

$F_2(\sqrt{10}$ □ $0)$ □

方法锦囊» □□□□□□□□□□□□

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□□□□□□□

□□6□□□□□□□□□ xOy □□□□□ $(0□\sqrt{2})$ □□□□ k □

□□ l □□□ $\frac{x^2}{2}□y^2□1$ □□□□□□□□ P □ Q.

(1)□ k □□□□□□

(2)□□□□ x □□□□□ y □□□□□□□□□□ A □ B □□

□□□□□ k □□□□□ $\vec{OP}$ □ $\vec{OQ}$ □ $\vec{AB}$ □□□□□□□□□ k

□□□□□□□□□□□□□□□

□ (1)□□□□□□□ l□□□□ y□kx□$\sqrt{2}$□

□□□□□□□□$\frac{x^2}{2}$□$(kx$□$\sqrt{2})^2$□1□

□□□□$\left(\frac{1}{2}\square k^2\right)x^2\square 2\sqrt{2}kx\square 1\square 0$□ ①

□□ l□□□□□□□□□□□ P□ Q□□□

$\Delta\square 8k^2\square 4\times\left(\frac{1}{2}\square k^2\right)\square 4k^2\square 2\square 0$□

□□ k□□$\frac{\sqrt{2}}{2}$□ k□$\frac{\sqrt{2}}{2}$□

□ k□□□□□□$\left(\square\infty\square\square\frac{\sqrt{2}}{2}\right)\cup\left(\frac{\sqrt{2}}{2}\square\square\infty\right)$.

(2)□ $P(x_1$□ $y_1)$□ $Q(x_2$□ $y_2)$□

□□□①□□ x_1□ x_2□□ $\dfrac{4\sqrt{2}k}{1\square 2k^2}$□ ②

□ y_1□ y_2□ $k(x_1$□ $x_2)$□ $2\sqrt{2}$. ③

□ $A(\sqrt{2}$□ $0)$□ $B(0,1)$□ $\vec{AB}$□ $(\square\sqrt{2}$□ $1)$□

□□ $\vec{OP}$□ $\vec{OQ}$□ $\vec{AB}$□□□□□

x_1□ x_2□□ $\sqrt{2}(y_1$□ $y_2)$□

□②③□□□□□□□ k□ $\dfrac{\sqrt{2}}{2}$□

□(1)□ k□□ $\dfrac{\sqrt{2}}{2}$□ k□ $\dfrac{\sqrt{2}}{2}$□□□□□□□□□□□ k.